

**METHODS OF FORMING LaNiO<sub>3</sub> CONDUCTIVE LAYERS, FERRO-ELECTRIC  
DEVICES WITH LaNiO<sub>3</sub> LAYERS, AND PRECURSOR FORMATION  
SOLUTIONS**

**ABSTRACT OF THE DISCLOSURE**

Methods of forming lanthanum nickel oxide (LaNiO<sub>3</sub>) layers with precursor formation solutions are disclosed, along with devices made from such solutions. Also disclosed are methods for making the formation solutions using lanthanum, nickel, and a diol. The present invention enables the manufacture of LaNiO<sub>3</sub> layers at low cost, with good resistivity properties, and a surface morphology suitable for interfacing to a ferroelectric material.